



**UNITED STATES DEPARTMENT OF COMMERCE
Patent and Trademark Office**

Address: COMMISSIONER OF PATENTS AND TRADEMARKS
Washington, D.C. 20231

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.
-----------------	-------------	----------------------	---------------------

08/938,173 09/26/97 BROCKHOFF

A P81957

EXAMINER

1M21/0722

OSTROLENK FABER GERB AND SOFFEN
1180 AVENUE OF AMERICAS
NEW YORK NY 10036

KIN, S

ART UNIT

PAPER NUMBER

1723

DATE MAILED:

4
07/22/98

Please find below and/or attached an Office communication concerning this application or proceeding.

Commissioner of Patents and Trademarks

Office Action Summary

Application No.

08/938,173

Applicant(s)

Brockhoff

Examiner

John Kim

Group Art Unit

1723



☒ Responsive to communication(s) filed on Sep 26, 1997

☐ This action is **FINAL**.

☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11; 453 O.G. 213.

A shortened statutory period for response to this action is set to expire 3 month(s), or thirty days, whichever is longer, from the mailing date of this communication. Failure to respond within the period for response will cause the application to become abandoned. (35 U.S.C. § 133). Extensions of time may be obtained under the provisions of 37 CFR 1.136(a).

Disposition of Claims

☒ Claim(s) 1-17 is/are pending in the application.

Of the above, claim(s) _____ is/are withdrawn from consideration.

☐ Claim(s) _____ is/are allowed.

☒ Claim(s) 1, 3, and 8-10 is/are rejected.

☒ Claim(s) 2, 4-7, and 11-17 is/are objected to.

☐ Claims _____ are subject to restriction or election requirement.

Application Papers

☒ See the attached Notice of Draftsperson's Patent Drawing Review, PTO-948.

☐ The drawing(s) filed on _____ is/are objected to by the Examiner.

☐ The proposed drawing correction, filed on _____ is ☐ approved ☐ disapproved.

☐ The specification is objected to by the Examiner.

☐ The oath or declaration is objected to by the Examiner.

Priority under 35 U.S.C. § 119

☒ Acknowledgement is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d).

☒ All ☐ Some* ☐ None of the CERTIFIED copies of the priority documents have been

☒ received.

☐ received in Application No. (Series Code/Serial Number) _____.

☐ received in this national stage application from the International Bureau (PCT Rule 17.2(a)).

*Certified copies not received: _____

☐ Acknowledgement is made of a claim for domestic priority under 35 U.S.C. § 119(e).

Attachment(s)

☒ Notice of References Cited, PTO-892

☐ Information Disclosure Statement(s), PTO-1449, Paper No(s). _____

☐ Interview Summary, PTO-413

☒ Notice of Draftsperson's Patent Drawing Review, PTO-948

☐ Notice of Informal Patent Application, PTO-152

--- SEE OFFICE ACTION ON THE FOLLOWING PAGES ---

Art Unit: 1723

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 3 and 8-10 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Recitations of "the flow", "the blood phase", "the radially outer region", "the gas phase", "the radially inner center", "the axial forward direction" and "the tangential direction" in claim 1, "the radially outer cyclone eddy region", "the radially inner cyclone eddy current region", "the cyclone outlet", "the cyclone eddy current path" and "the axial forward direction" in claim 3, "the inlet" in claims 8 and 10, "the inner housing wall" in claim 9 lack positive antecedent basis. Claim 3 is indefinite for failing to particularly point out what is being narrowed. Is it a cross section of the blood inlet channel?

3. Claims 2, 4-7 and 11-17 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

4. Claims 1 and 3 would be allowable if rewritten or amended to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action.

5. Claims 8-10 would be allowable if rewritten to overcome the rejection(s) under 35 U.S.C. 112, 2nd paragraph, set forth in this Office action and to include all of the limitations of the base claim and any intervening claims.

Art Unit: 1723

6. The following is a statement of reasons for the indication of allowable subject matter:

None of the prior art of record teaches or suggests the method of claim 1 for removing gas from gas containing blood comprising the steps of introducing gas containing blood into a helical, circularly extending, gradually narrowing cross section, blood inlet channel and moving blood through the narrowing cross section of the channel for accelerating blood flow through the channel as the channel narrows, introducing the accelerated blood flow into a following non-rotating cyclone eddy chamber at a rate sufficient for a blood phase of the gas containing blood to be urged into a radially outer region of the cyclone eddy chamber by centrifugal force and for a gas phase of the gas containing blood to be separated from the blood phase and to be urged into a radially inner region of the cyclone eddy chamber by the blood phase in that chamber, discharging gas phase from a radially inner center of cyclone eddy current at a place located downstream of the blood inlet channel in a direction lying in the region between the axial forward direction and the tangential direction of movement of the cyclone eddy current of the blood in the cyclone eddy chamber and the device of claim 3 for removing gas from gas containing blood comprising a non-rotating cyclone eddy chamber shaped for passing gas containing blood in the form of a cyclone eddy current for producing a centrifugal force that separates the blood into a blood phase in a radially outer cyclone eddy current region and a gas phase in a radially inner cyclone eddy current region, a cyclone inlet to the cyclone eddy chamber for gas containing blood, the cyclone inlet comprising at least one helically circularly extending blood inlet channel shaped for narrowing its cross section in funnel like manner, at least over part of its length in the direction of flow of blood

Art Unit: 1723

therealong, in a helical circular path shaped for accelerating the flow of gas containing blood through the blood inlet channel, the blood inlet channel having an end section directed substantially tangentially into the cyclone eddy chamber spaced from a cyclone outlet, a cyclone inlet and a cyclone outlet for the blood phase are arranged so that the cyclone eddy current rotates around as the blood moves through the cyclone eddy chamber without reversal of its directional flow from cyclone inlet to the cyclone outlet, a gas outlet from the cyclone eddy chamber separated from the cyclone outlet for the blood phase for discharge of the gas phase from the cyclone eddy chamber, the gas outlet being downstream of the blood inlet channel and in a radially inner center of the cyclone eddy current region and the gas outlet extending in a direction which lies in the region between an axial forward direction and a tangential direction of movement of the cyclone eddy current.

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. U.S. Patent No. 4,966,703 and 5,755,965 teach cyclone separators in the art.

8. Any inquiry concerning this communication or earlier communications from the examiner should be directed to John Kim whose telephone number is (703) 308-2350. The examiner can normally be reached on Tuesday-Friday from 8:30 AM - 5:00 PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Wanda Walker, can be reached on (703) 308-0457. The fax phone number for official response after final action is (703) 305-3599, and the fax phone number for all other official faxes is (703) 305-7718.


Serial Number: 08/938173

Page 5

Art Unit: 1723

When sending a draft amendment by fax, please mark the paper as "DRAFT"; otherwise, mark the paper "OFFICIAL". This will expedite the processing of the paper.

Any inquiry of a general nature or relating to the status of this application should be directed to the Group receptionist whose telephone number is (703) 308-0651.


John Kim
Primary Examiner
Art Unit 1723

J. Kim
July 17, 1998